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DRAWINGS ATTACHED

1 311 322

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(54) ACTUATOR NOZZLES FOR AEROSOL DISCHARGE VALVES OF PRESSURISED CONTAINERS

(71) We, BESPAK INDUSTRIES LIMITED, a British Company of Fieldings Road, Cheshunt, Waltham Cross, Hertfordshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to actuator nozzles for so-called "aerosol valves" for pressurised dispensing containers and provides a new and improved actuator nozzles for aerosol packs of de-icing composition, particularly for use in de-icing car door locks.

Modern car locks have a narrow entry slot and a cover which requires a substantial force to push it aside. Accordingly a nozzle which is to penetrate such a door lock must be slender but tough and strong, and must also be able to avoid being broken off at the tip on withdrawal, in spite of the sharp edges which are usually present. At the same time the nozzle should be very cheap and simple to produce.

The invention provides an actuator nozzle for an aerosol discharge valve of a pressurised dispensing container comprising a one-piece moulding of synthetic resin material having a central stem with a central aperture therethrough the stem being reinforced by ribs extending longitudinally along either side of the stem and integral therewith and having their axes parallel with the axis of the central stem. These ribs are preferably of part circular cross section. The actuator nozzle is shaped to fit, in use, over the central actuating stem of the aerosol valve of a pressurised aerosol pack.

Two forms of actuator nozzle according to the invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of one form of actuator nozzle;

Figure 2 is an axial section of the actuator nozzle of Figure 1;

Figure 3 is a top plan view of the actuator nozzle of Figure 1.

Figure 4 is a perspective view of a modified actuator nozzle.

Figure 5 is an axial section of the actuator nozzle of Figure 4;

Figure 6 is a partial top plan view of the actuator nozzle of Figure 4.

The actuator nozzles shown in Figures 1 - 3 is formed as a one piece moulding of a tough synthetic plastics material, such as Polypropylene, HD Polythene or Nylon. It has a circular base portion 1 with a central boss 2 and a central, tapering stem 3 reinforced on either side by longitudinal reinforcing ribs 4 of part circular cross-section, the ribs 4 having their axes parallel with the axis of the stem 3. The stem has a central aperture 6 of which the lower end portion 7 is of increased diameter to fit over the actuator stem of a standard "aerosol" valve, and the upper end terminates in a smaller diameter discharge orifice 8.

The actuator nozzle shown in Figures 4 - 6 is generally similar to that shown in Figures 1 - 3 and corresponding parts of the two nozzles are identified by the same reference numerals. The only principle point of difference is that the central stem 3 has a thickened lower portion terminating at its upper end in a pair of flat shoulders 3A, which serve, in use, to limit penetration of the nozzle into a door lock and thus avoid any tendency to jam in the slot of the door lock.

In use, an actuator nozzle is mounted on an aerosol de-icer pack, and the tip of the nozzle inserted in the opening of a car door lock. In both cases the cross section of the nozzle is such as to impart substantial strength and to minimise the danger of the

tip twisting off in the lock when the adaptor is withdrawn after use. At the same time, the section of both actuator nozzles lend themselves to injection moulding techniques with a fast and relatively inexpensive moulding cycle. Greater strength could obviously be imparted to the nozzles by incorporating more material, but this would increase the cost of material consumed and slow down the moulding cycle.

Variations in the details described above and illustrated will, of course, be possible. For example, the basic cross section of the central stem and/or reinforcing ribs could be non-circular, e.g. square or hexagonal. Instead of the extreme tip being flat, as shown in the actuator nozzle of Figures 1 - 3, we may prefer in some cases to cone or otherwise modify the upper ends of the reinforcing ribs in order to leave the extreme tip of the central stem proud of the ribs as shown in the actuator nozzle of Figures 4 - 6.

WHAT WE CLAIM IS:-

1. An actuator nozzle for an aerosol discharge valve of a pressurised container, particularly for use on a aerosol de-icer pack for use in de-icing car-door locks, comprising a one piece moulding of synthetic resin material having a central stem with a central aperture therethrough, the stem being reinforced by ribs extending longitudinally along either side of the stem and integral therewith and having their axes parallel with the axis of the central stem.

2. An actuator nozzle in accordance with claim 1, wherein the reinforcing ribs are of part circular cross-section.

3. An actuator nozzle according to claim 1 or 2 wherein the extreme tip of the central stem projects beyond the adjacent ends of the said ribs.

4. An actuator nozzle according to claim 3, wherein the said ends of the ribs are part conical.

5. An actuator nozzle according to any preceding claim, wherein the base portion of the stem is of increased thickness relative to the portion adjacent the tip, and terminates in a pair of flat shoulders facing towards the tip.

6. An actuator nozzle for an aerosol discharge valve of a pressurised container, comprising a one piece moulding of synthetic resin material having an inverted cup shaped base, a central boss extending upwardly from the centre of the base, a central stem extending upwardly from the boss, and reinforcing ribs extending longitudinally of the stem along either side thereof to or close to the tip of the stem, the central stem and reinforcing ribs being of part circular cross-section the reinforcing ribs having their axes parallel with the axis of the central stem, and the stem having a central aperture which continues downwardly through the boss to the interior of the cup-shaped base.

7. An actuator nozzle substantially as herein described with reference to Figures 1 to 3 of the accompanying drawings.

8. An actuator nozzle substantially as herein described with reference to Figure 4 to 6 of the accompanying drawings.

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1311322 COMPLETE SPECIFICATION
2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

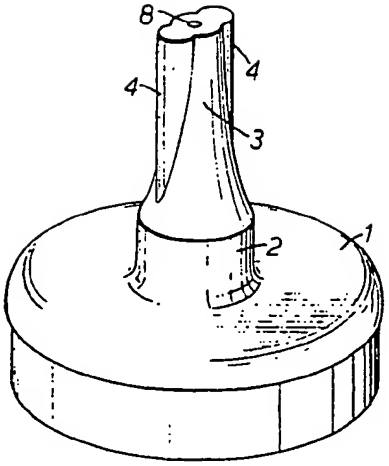

FIG.1.

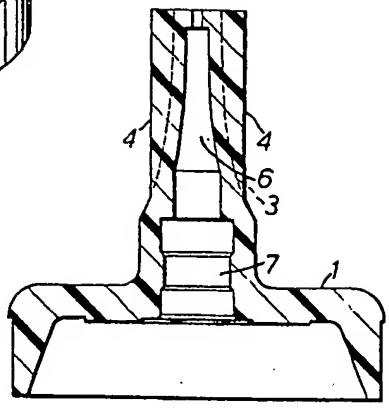

FIG.2.

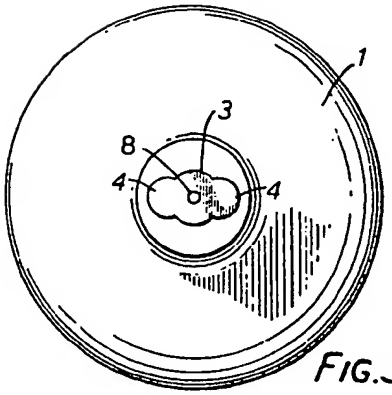

FIG.3.

1311322 COMPLETE SPECIFICATION
2 SHEETS This drawing is a reproduction of the Original on a reduced scale
Sheet 2

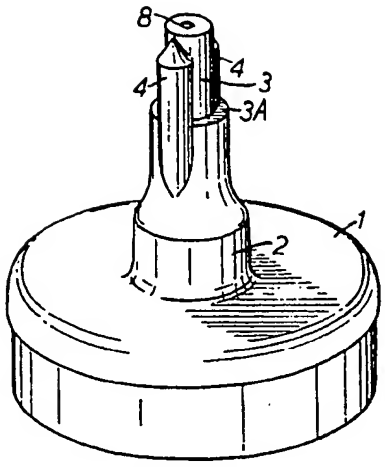

FIG.4.

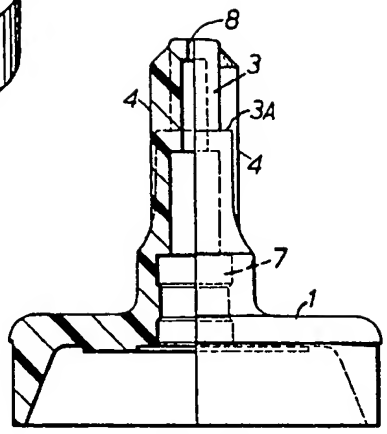

FIG.5.

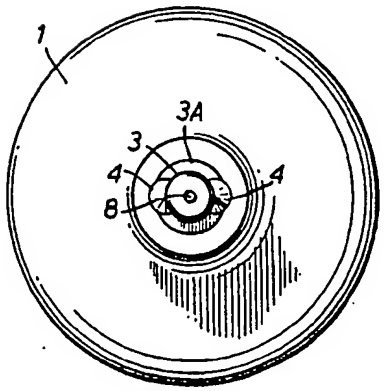

FIG.6.